

In re Patent Application of:
CLARKE
Serial No. 10/777,936
Filing Date: February 12, 2004

In the Claims:

This listing of claims replaces all prior versions and listing of claims in the application.

1. (Previously Presented) A communications system comprising:

a plurality of data storage devices each using at least one of a plurality of different operating protocols;

a plurality of mobile wireless communications devices for accessing said plurality of data storage devices and each using at least one of the plurality of different operating protocols; and

a protocol interface device comprising

a protocol engine module for communicating with said plurality of data storage devices using respective operating protocols,

a front-end proxy module coupled to said protocol engine module and comprising

a respective proxy module for communicating with said plurality of mobile wireless communications devices using each different operating protocol, and

at least one common core service module coupled to said proxy modules for routing traffic between said proxy modules and said protocol engine module, and

a configuration file module coupled to said front-end proxy module for storing a plurality of different

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sets of configuration files relating to different allocations of resources of the at least one common core service module,

said at least one common core service module allocating resources based upon a given service to be performed and a corresponding set of configuration files stored in said configuration file module.

2. (Original) The communications system of Claim 1 wherein said plurality of different sets of configuration files comprises a primary set of configuration files corresponding to core resource allocation operations, and a secondary set of configuration files for customizing the core resource allocation operations.

3. (Canceled)

4. (Original) The communications system of Claim 1 wherein said at least one common core service module is for accessing data from said plurality of data storage devices.

5. (Original) The communications system of Claim 1 wherein said at least one common core service module is for rendering data for said plurality of mobile wireless communications devices.

6. (Original) The communications system of Claim 1 wherein said at least one common core service module comprises a

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plurality of handlers for interfacing said proxy modules with said protocol engine module.

7. (Original) The communications system of Claim 6 wherein said plurality of proxy modules convert access requests from said plurality of mobile wireless communications devices to common access parameters; and wherein said front-end proxy module further comprises a flow controller module for receiving the common access parameters from said plurality of proxy modules and selecting desired handlers for processing thereof.

8. (Original) The communications system of Claim 6 wherein said plurality of handlers and said protocol engine module communicate using a common interface protocol.

9. (Original) The communications system of Claim 1 further comprising a renderer module for cooperating with said proxy modules to format data for said plurality of mobile wireless communications devices.

10. (Original) The communications system of Claim 9 further comprising an extensible mark-up language (XML) engine module coupled to said renderer module.

11. (Original) The communications system of Claim 10 further comprising a memory coupled to said XML engine module for storing a plurality of templates corresponding to respective operating protocols.

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12. (Previously Presented) A protocol interface device for interfacing a plurality of mobile wireless communications devices with a plurality of data storage devices, the mobile wireless communications devices and the data storage devices each using at least one of a plurality of different operating protocols, the protocol interface device comprising:

- a protocol engine module for communicating with the plurality of data storage devices using respective operating protocols;

- a front-end proxy module coupled to said protocol engine and comprising

 - a respective proxy module for communicating with the plurality of mobile wireless communications devices using each different operating protocol, and

 - at least one common core service module coupled to said proxy modules for routing traffic between said proxy modules and said protocol engine module; and

- a configuration file module coupled to said front-end proxy module for storing a plurality of different sets of configuration files relating to different allocations of resources of the at least one common core service module;

 - said at least one common core service module allocating resources based upon a given service to be performed and a corresponding set of configuration files stored in said configuration file module.

13. (Original) The protocol interface device of Claim

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12 wherein said plurality of different sets of configuration files comprises a primary set of configuration files corresponding to core resource allocation operations, and a secondary set of configuration files for customizing the core resource allocation operations.

14. (Previously Presented) The protocol interface device of Claim 12 wherein said at least one common core service module is also for at least one of accessing data from the plurality of data storage devices and rendering data for the plurality of mobile wireless communications devices.

15. (Original) The protocol interface device of Claim 12 wherein said at least one common core service module comprises a plurality of handlers for interfacing said proxy modules with said protocol engine module.

16. (Original) The protocol interface device of Claim 15 wherein said plurality of proxy modules convert access requests from the plurality of mobile wireless communications devices to common access parameters; and wherein said front-end proxy module further comprises a flow controller module for receiving the common access parameters from said plurality of proxy modules and selecting desired handlers for processing thereof.

17. (Previously Presented) A protocol interface device for interfacing a plurality of communications devices with a

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plurality of data storage devices, the communications devices and the data storage devices each using at least one of a plurality of different operating protocols, the protocol interface device comprising:

- a protocol engine module for communicating with the plurality of data storage devices using respective operating protocols;

- a front-end proxy module coupled to said protocol engine and comprising

 - a respective proxy module for communicating with the plurality of communications devices using each different operating protocol, and

 - at least one common core service module coupled to said proxy modules for routing traffic between said proxy modules and said protocol engine module; and

- a configuration file module coupled to said front-end proxy module for storing a plurality of different sets of configuration files relating to different allocations of resources of the at least one common core service module;

- said at least one common core service module allocating resources based upon a given service to be performed and a corresponding set of configuration files stored in said configuration file module.

18. (Original) The protocol interface device of Claim 17 wherein said plurality of different sets of configuration files comprises a primary set of configuration files corresponding to core resource allocation operations, and a

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secondary set of configuration files for customizing the core resource allocation operations.

19. (Previously Presented) The protocol interface device of Claim 17 wherein said at least one common core service module is also for at least one of accessing data from the plurality of data storage devices and rendering data for the plurality of communications devices.

20. (Original) The protocol interface device of Claim 17 wherein said at least one common core service module comprises a plurality of handlers for interfacing said proxy modules with said protocol engine module.

21. (Original) The protocol interface device of Claim 20 wherein said plurality of proxy modules convert access requests from the plurality of communications devices to common access parameters; and wherein said front-end proxy module further comprises a flow controller module for receiving the common access parameters from said plurality of proxy modules and selecting desired handlers for processing thereof.

22. (Previously Presented) A method for interfacing a plurality of mobile wireless communications devices with a plurality of data storage devices, the mobile wireless communications devices and the data storage devices each using at least one of a plurality of different operating protocols, the method comprising:

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providing a protocol engine module for communicating with the plurality of data storage devices using respective operating protocols;

coupling a front-end proxy module to the protocol engine comprising

a respective proxy module for communicating with the plurality of mobile wireless communications devices using each different operating protocol, and

at least one common core service module coupled to the proxy modules for routing traffic between the proxy modules and the protocol engine module; and

providing a configuration file module for the front-end proxy module for storing a plurality of different sets of configuration files relating to different allocations of resources of the at least one common core service module,

the at least one common core service module allocating resources based upon a given service to be performed and a corresponding set of configuration files stored in the configuration file module.

23. (Original) The method of Claim 22 wherein the plurality of different sets of configuration files comprises a primary set of configuration files corresponding to core resource allocation operations, and a secondary set of configuration files for customizing the core resource allocation operations.

24. (Previously Presented) The method of Claim 22 wherein the at least one common core service module is also for

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at least one of accessing data from the plurality of data storage devices and rendering data for the plurality of mobile wireless communications devices.

25. (Original) The method of Claim 22 wherein the at least one common core service module comprises a plurality of handlers for interfacing the proxy modules with the protocol engine module.

26. (Original) The method of Claim 25 wherein the plurality of proxy modules convert access requests from the plurality of mobile wireless communications devices to common access parameters; and wherein the front-end proxy module further comprises a flow controller module for receiving the common access parameters from the plurality of proxy modules and selecting desired handlers for processing thereof.

27. (Previously Presented) A computer-readable medium having computer executable modules for interfacing a plurality of mobile wireless communications devices with a plurality of data storage devices, the mobile wireless communications devices and the data storage devices each using at least one of a plurality of different operating protocols, the computer-readable medium comprising:

a protocol engine module for communicating with the plurality of data storage devices using respective operating protocols;

a front-end proxy module coupled to the protocol engine

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and comprising

a respective proxy module for communicating with the plurality of mobile wireless communications devices using each different operating protocol, and

at least one common core service module coupled to the proxy modules for routing traffic between the proxy modules and the protocol engine module; and

a configuration file module coupled to the front-end proxy module for storing a plurality of different sets of configuration files relating to different allocations of resources of the at least one common core service module,

the at least one common core service module allocating resources based upon a given service to be performed and a corresponding set of configuration files stored in the configuration file module.

28. (Original) The computer-readable medium of Claim 27 wherein the plurality of different sets of configuration files comprises a primary set of configuration files corresponding to core resource allocation operations, and a secondary set of configuration files for customizing the core resource allocation operations.

29. (Previously Presented) The computer-readable medium of Claim 27 wherein the at least one common core service module is also for at least one of accessing data from the plurality of data storage devices and rendering data for the plurality of mobile wireless communications devices.

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30. (Original) The computer-readable medium of Claim 27 wherein the at least one common core service module comprises a plurality of handlers for interfacing the proxy modules with the protocol engine module.

31. (Original) The computer-readable medium of Claim 30 wherein the plurality of proxy modules convert access requests from the plurality of mobile wireless communications devices to common access parameters; and wherein the front-end proxy module further comprises a flow controller module for receiving the common access parameters from the plurality of proxy modules and selecting desired handlers for processing thereof.